

EXHIBIT 12

The Guardian

This article is more than **3 years old**

Google launches new Chromecast and Chromecast Audio streaming dongles

Updated smart TV dongle improves Wi-Fi and reduces buffering while new audio connector turns almost any hi-fi smart with wireless audio streaming

Samuel Gibbs

Tue 29 Sep 2015
13.00 EDT

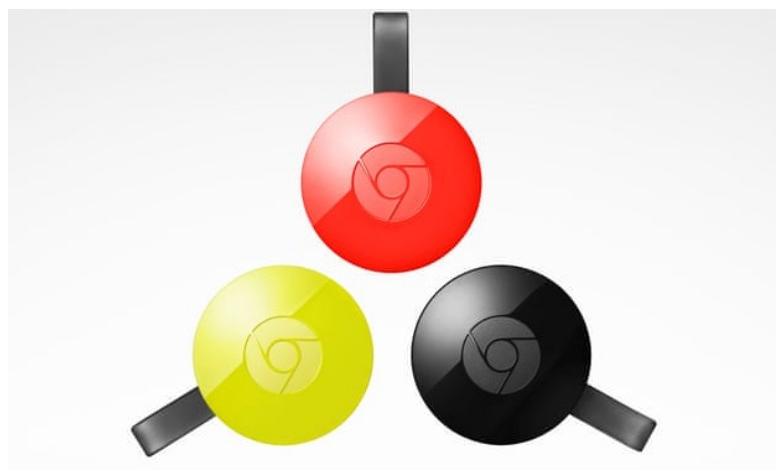


Google's new Chromecasts turn TVs and HiFis smart with wireless streaming from any iPhone, Android or computer. Photograph: Google

Google has announced two new Chromecast streaming gadgets, one for streaming video and photos to a TV, and one for streaming music to any standard speakers.

An update to the original Chromecast, which has sold over 20m devices, the new video version receives streams over Wi-Fi using Google's Cast protocol from compatible apps running on an Android or iPhone or a computer.

The new Chromecast for the TV is a circular puck shape and plugs into the HDMI slot on a television via an integrated short, flat HDMI cable.



The new Chromecast will be available in three colours and has a magnet that attaches the HDMI cable to the puck for storage.

Photograph: Google

The new larger circular shape contains three Wi-Fi aerials supporting the newer dual-band Wi-Fi 802.11ac version, which should provide a “more robust, high quality streaming experience for less buffering than you would have found previously with the Chromecast” according to Google’s head of Chromecast for Northern Europe, Dan Saunders.

The new device will also speed up streaming by pre-loading both apps and content it thinks you’ll want to access. Netflix will load its player and predict what you’re going to watch next and start buffering the video in the background before you select it so that it starts instantly without needing to wait for the first bit to download.

The device will also feature more games including Rovio’s Angry Birds and some racing games, competing with Amazon’s Fire TV and Apple’s incoming new TV box.

Chromecast Audio



Google hopes the Chromecast Audio will do for the hi-fi what streaming media boxes and the Chromecast has done for TV.

Photograph: Google

Google's first Chromecast Audio operates in a similar manner to the video version of Chromecast, but connects to a pair of speakers or a hi-fi via a 3.5mm line out, optical out or standard phono (RCA) jacks.

"We're trying to do for hi-fi what we've done with the TV - turn your hi-fi into a smart hi-fi," said Saunders. "If you're used to using apps on your smartphone then using the Chromecast should be easy, as all the processing and control is done on the phone."

The Chromecast Audio will support any audio streaming over Google Cast including Google's Play Music, Deezer and TuneIn radio. Spotify also announced Chromecast support, while BBC Radio player support will be added in the near future.

Google is also working on multi-room audio streaming using the Chromecast Audio, but it will not support the popular feature out of the box.

Google's Chromecast app for iOS and Android is also getting a makeover, suggesting new Chromecast apps and showcasing content from apps a user already has installed. Tapping on a show such as Breaking Bad within the new Chromecast app will take the user directly to the show within the Netflix app to start streaming it.

The Chromecast app will also act as a remote control for the Chromecast streaming dongle allowing users other than the person who initiated the stream to pause playback without having to have the Netflix app or a subscription, for instance.

Both new Chromecasts are powered by a microUSB cable and will be available in the next week or so, costing £30.

Google Chromecast review: simple, fast internet TV

Since you're here...

... we have a small favour to ask. More people are reading and supporting The Guardian's

independent, investigative journalism than ever before. And unlike many news organisations, we have chosen an approach that allows us to keep our journalism accessible to all, regardless of where they live or what they can afford. But we need your ongoing support to keep working as we do.

The Guardian will engage with the most critical issues of our time - from the escalating climate catastrophe to widespread inequality to the influence of big tech on our lives. At a time when factual information is a necessity, we believe that each of us, around the world, deserves access to accurate reporting with integrity at its heart.

Our editorial independence means we set our own agenda and voice our own opinions. Guardian journalism is free from commercial and political bias and not influenced by billionaire owners or shareholders. This means we can give a voice to those less heard, explore where others turn away, and rigorously challenge those in power.

We need your support to keep delivering quality journalism, to maintain our openness and to protect our precious independence. Every reader contribution, big or small, is so valuable.

Support The Guardian from as little as \$1 - and it only takes a minute. Thank you.

Support The Guardian



Topics

- Google
- Chrome
- Digital music and audio
- Video on demand
- Android
- Television
- Music streaming
- news